

Fundamental of Submarine Cables: Undersea Communication

Telecom Engineering
Amsterdam (Netherlands)
22 - 26 Sep 2025

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Fundamental of Submarine Cables: Undersea Communication

Ref: 321711_144583 **Date:** 22 - 26 Sep 2025 **Location:** Amsterdam (Netherlands) **Fees:** 4200 Euro

Course Description

This intensive 5-day course provides a comprehensive overview of submarine cable systems, the backbone of global telecommunications. Participants will gain in-depth knowledge of cable design, installation techniques, maintenance procedures, and emerging technologies. The course covers both power and telecommunication cables, emphasizing their critical role in the digital age.

Learning Objectives

- Understand the fundamental principles and components of submarine cable systems
- Learn cable design, manufacturing, and testing processes
- Master installation techniques, including marine surveys and cable laying
- Develop skills in cable system operation, maintenance, and fault detection
- Explore future trends and innovations in submarine cable technology

Course Modules

Day 1: Introduction to Submarine Cables

- History and importance of submarine cables
- Types of submarine cables: power and telecommunication
- Global submarine cable network overview
- Cable system architecture: wet and dry plants

Day 2: Cable Design and Manufacturing

- Cable design principles and materials
- Optical fiber technology for submarine applications
- Manufacturing processes and quality control
- Testing procedures and standards

Day 3: Installation and Marine Operations

- Marine surveys and route planning
- Cable laying techniques and equipment
- Shore-end operations and landing stations
- Environmental considerations and regulations

Day 4: System Operation and Maintenance

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- Power feed equipment and monitoring systems
- Fault detection and localization techniques
- Repair procedures and specialized vessels
- Cable protection strategies

Day 5: Future Trends and Emerging Technologies

- Capacity expansion: SDM and multicore fibers
- Integration with 5G and IoT networks
- Environmental sensing and disaster warning applications
- Economic and geopolitical aspects of submarine cables

Practical Wins for Participants

- Ability to contribute to submarine cable project planning and execution
- Skills to optimize cable system performance and reliability
- Knowledge to assess and implement emerging submarine cable technologies
- Understanding of the global submarine cable market and industry trends

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